
SPECIES on the EDGE
Benefits to Local Communities

"Species on the Edge"

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Cover photo: Sonoran Mountain Kingsnake by Bill Bosworth

Michael O. Leavitt
Governor
State of Utah

From the Governor

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MICHAEL O. LEAVITT
GOVERNOR

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The Endangered Species Mitigation Fund was created by the Utah legislature in 1998 to provide protection for the habitats of endangered and sensitive species. It has become an effective funding mechanism for working cooperatively with land and water developers to stimulate economic growth without jeopardizing the futures of many wildlife species throughout the state.

This publication provides a number of examples of how the fund has been used effectively in the responsible management of fish and wildlife in our state. I commend the Utah legislature for their foresight in creating the Endangered Species Mitigation Fund, and also the men and women working cooperatively throughout the state for the mutual benefit of wildlife and the citizens of Utah.

Sincerely

Michael O. Leavitt
Governor

Robert Morgan
Executive Director
Utah Department of Natural Resources

From the Executive Director

The Endangered Species Mitigation Fund (ESMF) was created by the Utah legislature as a funding source to help protect essential habitat for Utah's endangered and sensitive wildlife species. The fund makes it possible for Utah land and water developers to continue responsible economic growth and development throughout the state while providing for the needs of several wildlife species which are, or may soon be, facing serious challenges -- species like the Utah prairie dog, desert tortoise, Virgin River spinedace and spotted frog.

Through innovative, cooperative partnerships funded by the ESMF, state wildlife managers are working hard to create conservation and habitat agreements aimed at down-listing existing threatened and endangered species and avoiding the listing of other sensitive wildlife species. It's ironic that this year, with Utah facing budget challenges and the ravages of drought, the ESMF becomes even more essential to the state's economic health and well being than ever before.

The ESMF provides a stable, non-lapsing revenue base which addresses the needs of Utah communities, local government and citizens who have struggled financially to comply with the requirements of federal law. At the Department of Natural Resources, we will continue to manage the ESMF in a manner consistent with our mission to sustain and enhance the quality of life for people today and tomorrow through the coordinated and balanced stewardship of our natural resources.

Kevin K. Conway
Director
Utah Division of Wildlife Resources

From the DWR Director

The 2002 issue of *Species on the Edge* includes several success stories about Utah's endangered and threatened wildlife species. From prairie dogs to spotted frogs, these stories demonstrate the vital role the Endangered Species Mitigation Fund is playing in recovery efforts and conservation plans aimed at down-listing species and keeping others off the federal list completely.

As we near the end of the third year of projects funded by the Endangered Species Mitigation Fund (ESMF), we have learned to use the fund more effectively by partnering with the U.S. Fish and Wildlife Service, local governments and land and water developers throughout the state. Habitat Conservation Plans (HCPs) developed for the desert tortoise, the Utah prairie dog and the Colorado and Bonneville cutthroat trout are outstanding examples of what can be done with ESMF monies and a lot of hard work at the grassroots level.

We are also using the ESMF to initiate important research projects to determine the status of other species like sage-grouse, pygmy rabbits and spotted frogs. This work is absolutely essential if we are to avoid federal listing and continue to manage these species at the state level. We know all too well the price we pay in terms of economic development when a species is placed on the federal ESA list.

At the Division of Wildlife Resources, we are proud of the work we have done in the past year thanks to financial support from the ESMF. I encourage you to read all the reports and stories in this publication to find out how Utah tax dollars can really be put to work for the mutual benefit of wildlife and people.

Endangered Species Mitigation Fund

Applications

Following publication of this report, we anticipate that some questions will arise regarding the availability of the Endangered Species Mitigation Fund (ESMF) to help alleviate Endangered Species Act (ESA) problems or concerns throughout the state. Therefore the basics of criteria, application deadlines and where to get additional help are summarized below.

Criteria

The purpose of the ESMF is to help the citizens of Utah maintain a high quality of life both economically and environmentally by studying and conserving flora and fauna listed under the ESA, conservation species and sensitive species, and by assisting local communities and private property holders to comply with provisions of the ESA. Projects will be selected based on their balance between resource stewardship and need for development, their ability to enhance Utah's quality of life both environmentally and economically, and be consistent with the legislative intent of Utah Code 63-34-14.

Projects should provide direct benefits to listed and sensitive species and be sound biologically. When possible, projects should be cost shared and will be given priority based on their benefit and cost, permanence and overall compatibility with local needs and interests.

Finally, applicants should demonstrate capability to complete the project, have full public support, and make sure their project is consistent with tribal, state and federal laws.

Initially, many projects will be funded which will help remove threats to species and thereby reduce their likelihood of being formally listed under ESA. Additionally, studies will be undertaken to determine actual presence and absence of species, in order that sound scientific determinations will be made during the listing process. Funding will also be made available to help communities and individuals comply with biological opinions or protection measures required by the ESA.

Application Deadline

Applications will be accepted for 60 days prior to April 1, 2003. Successful applicants will be notified within 60 days and funding will be made available after July 1, 2003.

Questions or Concerns

If you have questions, would like an application form, or would like more specific information regarding the Endangered Species Mitigation Fund, please contact:

Utah Department of Natural Resources

Reed Harris
1594 West North Temple,
Salt Lake City, Utah 84116
(801) 538-7420

Identification of Sensitive Species Keeps Endangered Species Act at Bay

By Michael F. Canning
DWR Conservation Data/GIS Coordinator

The federal Endangered Species Act (ESA) of 1973 was created to prevent plant and animal species from becoming extinct. Although the ESA has had some success, such as the recent recovery of the Peregrine Falcon, it has been heavily criticized because of its negative impacts on the communities located near threatened and endangered species.

Once a species is federally listed, the ESA restricts development, land management, and other activities for the purpose of species recovery.

To avoid the negative consequences of the ESA, the Utah Division of Wildlife Resources (Division) has developed the Utah Sensitive Species List, which identifies the Utah species most vulnerable to population or habitat loss. The Division's goal in creating this list is to develop and implement appropriate conservation strategies for sensitive species so the need for future federal listings under the ESA can be precluded.

Utah is home to myriad diverse species. Because Utah's species are so diverse, they have different natural distributions, habitat requirements, and life

Utah Sensitive Species List — Being Revised

Although the current Utah Sensitive Species List has served its purpose well, it has not been updated for several years and is currently under revision. These revisions are occurring pursuant to the new Utah Department of Natural Resources rule R657-48, Implementation of the Wildlife Species of Concern and Habitat Designation Advisory Committee.

In the past, species were placed on the Utah Sensitive Species List by the Division based on the best available habitat, distribution, abundance, life history, population trend, genetic, and threat data available at the time. Under the new rule, these biological factors will be considered in conjunction with economic data and political concerns to create a balanced Utah Sensitive Species List that should greatly benefit everyone.

histories, and may face dissimilar threats. For example, the Bonneville cisco (*Prosopium gemmifer*), a small member of the salmon/trout family, is a sensitive species because of its extremely limited global distribution.

Illustration by Lani Nielsen

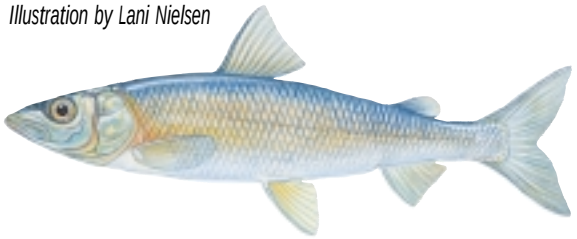


Illustration: Bonneville cisco

In fact, this species occurs in Bear Lake, along the Utah–Idaho border, and nowhere else in the world. Although this species is abundant in Bear Lake, and its population numbers are apparently stable, the entire species could be imperiled by significant habitat alterations or other changes at the lake.

Conversely, the Common Yellowthroat (*Geothlypis trichas*), a neotropical migrant bird, is also classified as a sensitive species, although it's definitely not limited in distribution. This species breeds in riparian and wetland areas throughout much of North America, including Utah. Unfortunately, this bird has experienced significant population declines throughout its range and in Utah, likely due to the large-scale destruction and alteration of wetland and riparian habitats. It is apparent that impacts to any particular area will not threaten the future survival of this species, but the continued wide-spread development of wetlands and riparian areas will cause further reductions in Common Yellowthroat populations, and will further imperil the species.

Although the Bonneville cisco and the Common Yellowthroat have little in common, they are linked by the fact that they are vulnerable if their habitats are not properly managed. The Division has the responsibility to ensure that Utah populations of these and other sensitive species remain viable, without causing unnecessary hardship to the citizens of the state.

The Utah Sensitive Species List is an invaluable tool that allows the Division to accomplish this important mandate. It guides many Division actions, such as

decisions about spending the limited funds available for non-game research, habitat restoration activities, and habitat protection.

The list is also used to identify the species for which Conservation Agreements may be needed. Conservation Agreements are discussed in detail elsewhere in this publication. For purposes of this article, however, Conservation Agreements are contracts that allow for species recovery, while still providing opportunities for community growth. They provide a "win-win" situation whereby sensitive species benefit without the negative impacts on people that often result when a species is listed under the ESA.

In addition to the benefits described above, the Utah Sensitive Species List is an integral part of the Division's impact-analysis efforts. The Division, in conjunction with the Utah Reclamation Mitigation and Conservation Commission and other federal agencies, has developed a biodiversity database for Utah. Along with life history, trend, and threat information, this database contains detailed distribution information for all of Utah's sensitive species. When development projects, such as pipelines and mines, are in their early stages, project proponents often ask the Division to comment on how the proposed actions will affect wildlife. When the Division receives such a request, we query our biodiversity database to determine which sensitive species are known to occur in the project area. After this determination is made, the Division can work with the project proponent to avoid, minimize, or mitigate impacts to these species.

Such cooperative efforts benefit local communities in at least two major ways. First, they allow development — which is vital to local economies — to proceed with minimum delay. Second, they protect sensitive species from unnecessary negative impacts. Reducing negative impacts to sensitive species keeps their populations as viable as possible and reduces the chance that citizens will be negatively impacted by the restrictions

that would be enacted if these species were listed under the ESA.

One example of such a cooperative effort is a recent pipeline expansion project in western Utah. As originally proposed, this project would have negatively affected Burrowing Owls (*Athene cunicularia*) and Greater Sage-grouse (*Centrocercus urophasianus*), two species that are on the Utah Sensitive Species List and may be proposed for listing under the ESA in the future. The Division used its biodiversity database to determine where these species are known to occur along the pipeline route. After discussions among the project proponent, the Division, the U. S. Bureau of Land Management and the U. S. Fish and Wildlife Service, mitigation strategies were developed that allowed the project to proceed on schedule, while minimizing impacts to the two sensitive species.

These mitigation strategies were quite simple and included such items as restoring altered habitats after pipeline completion and constructing the pipeline during the late summer, to minimize the impacts on young birds. If Burrowing Owl and Greater Sage-grouse populations had been significantly harmed by this project (and by other projects where the Division has been able to develop appropriate mitigation) there would be a greater likelihood that these species would be federally listed in the future.

In conclusion, the Utah Sensitive Species List was developed to benefit both the wildlife and citizens of Utah. The limited number of Utah species that have been federally listed under the ESA during the past several years is a testament to its success.

Illustration: sage-grouse

Price & San Rafael River Basins Benefit From Depletion Flow Payments

by Roger Barton

Water has always been an important element of survival for agricultural producers in the Price and San Rafael basins in Carbon and Emery counties. When the Bureau of Reclamation's Colorado River Salinity Control Program was introduced to the area, landowners saw it as a chance to improve irrigation practices, soils, crop yields, water quality and assist in the preservation of threatened and endangered fish.

As plans were being developed to implement the salinity control program, it was determined that the irrigation improvements would deplete the amount of water entering the Colorado River. The U.S. Fish and Wildlife Service and the Bureau of Reclamation concurred that the depletion would not jeopardize Threatened and Endangered (T&E) fish species in the river, but also agreed that irrigation project sponsors should pay a depletion flow payment to a Recovery Implementation Program.

Landowners and irrigation companies are willing to participate in this program because they're realizing many benefits. Soils will improve, crop yields will increase and irrigation water will be utilized more efficiently. Also, by making a one time, up front payment, local communities are doing their share to preserve the T&E fish. Water quality will improve for the fish as well as for water users downstream.

It has been difficult for the small irrigation companies to make the depletion flow payment, but the State of Utah has given assistance by paying 10 percent of the total cost through use of grants from the Endangered Species Mitigation Fund.

Leatherside Chub: A Tale of Two Fishes?

By Matthew E. Andersen
DWR Native Aquatic Species Coordinator

The leatherside chub is a small native fish in the minnow family native to Utah. As Division of Wildlife Resources managers and other scientists learn more about this diminutive fish, they continue to find dichotomies in its story.

The leatherside chub, as it's currently described, exists in two diverse, disjunct drainages. Originally found in the 1800s in the Bear River near Evanston, Wyoming, modern populations of leatherside chub are found in tributaries of the Bear and Snake rivers in Utah, Wyoming and Idaho. It's also found in the Sevier River drainage in southern and central Utah. It exists in mountain and desert streams.

Whether the leatherside chub are more accurately described as one or two species is the subject of a current debate in scientific literature. Northern populations of leatherside chub may be more closely related to the woundfin and Virgin spinedace of the Virgin River system than to the southern populations of leatherside chub. DWR managers are currently emphasizing identification of all populations of leatherside chub and controlling negative impacts of nonnative

Photo: leatherside chub

fish, while respecting existing water rights. Additional studies of leatherside chub are being funded, in part, with support from the Endangered Species Mitigation Fund.

The DWR has been striving to include water users in these investigations. Irrigation cooperatives represented by Clyde Bunker are actively supporting field research on leatherside chub in the Sevier River below Yuba Dam. Bunker says he and his shareholders are gaining ownership in scientific results so that all involved parties can share information on which to base decisions. "It's when we don't know what's out there that we run into problems," Bunker says.

The diverse story of the leatherside chub will continue to be studied and told in the coming months and years. No matter what the results of studies and management negotiations, the DWR will seek solutions that preserve Utah's natural heritage for the future while respecting the potential of natural resources today.

Hopefully the search will lead all concerned to a better place than they have ever been before.

Photo: leatherside chubs in aquarium

Pygmy Rabbits In Utah

By Dr. Michael L. Wolfe
Professor of Wildlife Science
Utah State University

Most persons living in Utah are unaware of the diversity of lagomorphs (rabbit-like animals) that inhabit the state. We have two species of cottontail, desert (*Sylvilagus audubonii*), mountain (*Sylvilagus nuttallii*); three species of hare, black-tailed (*Lepus californicus*) and white-tailed (*Lepus townsendii*) jackrabbits and snowshoe hare (*Lepus americanus*); as well as pygmy rabbit (*Brachylagus idahoensis*) and American pika (*Ochotona princeps*).

Of these, the pygmy rabbit is probably the least well-known member of the hare family (Leporidae).

In the field, pygmy rabbits might be mistaken for a juvenile cottontail rabbit, but they lack the conspicuous white tail of the latter species. The ears are short in proportion to the head, oval-shaped and have whitish buff-colored edges. In contrast to other rabbits that have a hopping gait, pygmy rabbits tend to scamper.

Among North American leporidaes, the pygmy rabbit is unique in several respects. It's the smallest member of the

Photo: pygmy rabbit

family, weighing only about 400 g, and the only species north of Mexico that digs its own burrows. The animals are known, however, to make use of burrows abandoned by other animals, such as badgers and marmots. The pygmy rabbit is also highly dependent on sagebrush, which may comprise up to 99 percent of its winter diet. Tall, dense sagebrush

stands and relatively deep, loose soil are vital components of pygmy rabbit habitat.

Historically, the pygmy rabbit occurred throughout much of the sagebrush area of the Great Basin as well as some of the adjacent areas of the Intermountain West. This range includes portions of eastern California, Oregon and Washington as well as Nevada, southern Idaho, extreme southern Montana, Utah and western Wyoming. The species range in the Columbia Basin of Washington is separated from its core range, and likely has been so for some time.

In Utah, the historic range of the species encompassed an area in the western portion of the state extending from Cache County in the north to Iron County in the south. More recently populations have been reported in parts of Rich, Sevier and Wayne counties. Depending upon the geographic location of the population, the general altitudinal range for the species varies from 1,400 to 2,000 m. As is the case with sage-grouse, the fragmentation and modification of sagebrush ecosystems throughout broad areas of the western United States appear to have been responsible for an overall decline in the species.

To date most studies of pygmy rabbits have focused on the animals' life history and behavior, with relatively less attention on habitat relationships. Pygmy

Photo: pygmy rabbit

rabbits attain sexual maturity at approximately one year of age, and females generally produce two litters of four to eight young per year. Mortality is extremely high, and as much as 90 percent of a given cohort may perish during the year. Predation is the chief cause of mortality, with coyotes, badgers and weasels being the principal predators. In some cases, coyotes may

"camp out" at pygmy rabbit burrows, waiting for the rabbits to emerge. Other predators include bobcats, foxes and several avian species, such as hawks, harriers and owls.

Determining whether pygmy rabbits are present at a given location can be difficult. The animals generally excavate their burrows in areas with wind- or water-deposited soils that are at least 10 cm deep. The deeper soil supports the growth of sagebrush plants that are taller than those of surrounding areas. The animals' burrows usually have several entrances (two to five) with a diameter of ~75 mm, and which are typically located at the base of sagebrush plants. The presence of large numbers of fecal pellet (~ 2mm in diameter) and sometimes dead sagebrush plants indicate occupancy. However, only the presence of dark-colored, unweathered pellets indicate recent occupancy.

Currently, the best method to inventory areas that may have pygmy rabbit populations is to drive two-track roads very slowly, searching for tracks in fresh snow, and then following the tracks to burrow systems.

Some authorities have suggested that numbers of pygmy rabbits may have been in decline for several thousand years. However, there is little doubt that anthropogenic changes since settlement of the Intermountain West have hastened these postulated declines. In fact, the pygmy rabbit may well be the mammalian equivalent of the sage-grouse.

The principal factor involved has been the destruction of sagebrush ecosystems. Since the turn of the century, large portions of the original sagebrush tracts on flat or gentle slopes, and underlain by deeper soils, have been converted to agriculture or lost to suburban development. These areas originally supported the taller, denser sagebgrush stands favored by pygmy rabbits.

A good example of the latter is the area around Enoch near Cedar City. Formerly, the site was inhabited by both pygmy rabbits and Utah prairie dogs.

Now, it's almost entirely a subdivision. Vast tracts of the residual sagebrush area have been subjected to a variety of treatments using herbicides, mechanical means, or fire to remove or reduce the density of sagebrush and promote the growth of grasses for livestock grazing. More recently, large areas of known and potential habitat have been lost to fire, both prescribed and natural. Grazing itself can reduce the prevalence of herbaceous plants in the understory. Even though adult pygmy rabbits subsist largely on sagebrush, herbaceous plant materials are an important element in the diet of juveniles.

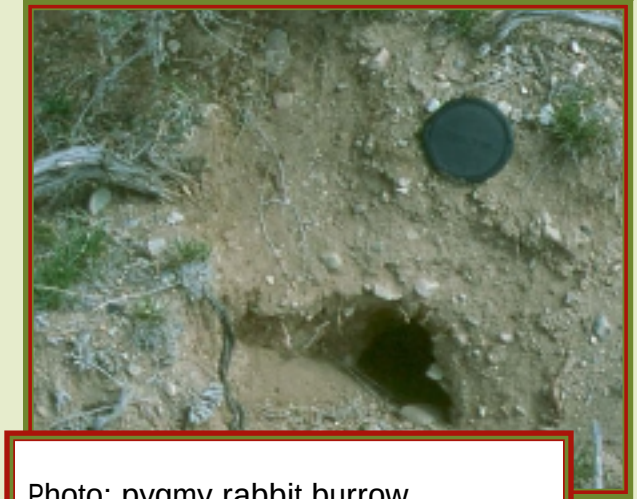


Photo: pygmy rabbit burrow

Against this backdrop of continued habitat destruction, the infamous "rabbit drives" of yesteryear undoubtedly took their toll on pygmy rabbits. The cumulative result of these factors has likely created small isolated populations, which are particularly vulnerable to and perhaps not capable of persisting under the plethora of natural and anthropogenic mortality sources.

As noted above, predation constitutes the primary source of pygmy rabbit mortality. The general increase and widespread distribution of coyotes across the Western landscape during the past 50 to 100 years has likely taken its toll on the rabbits. Although pygmy rabbits may be taken incidentally to hunting of cottontails or recreational shooting of jackrabbits, the impact of this source of mortality may be secondary to other factors. To what extent diseases such as plague affect pygmy rabbits is poorly known.

Surveys conducted in 2000 at 27 historical sites in southeastern Oregon and southwestern Idaho revealed pygmy rabbit sign (recently used burrows) at only five of these sites. In Utah, Janson (1946) studied the ecology and distribution of the pygmy rabbit in the early

1940s. Janson recently revisited many of the sites where he had found pygmy rabbits and determined that they were no longer present there.

The statutory protection accorded to pygmy rabbits varies among the different states within the species' range. In Montana, Nevada, Oregon and Wyoming, pygmy rabbits are classified as upland game species. Although listed as a "Species of Special Concern" in Idaho since 1981, the rabbits were hunted as upland game there until recently, when they were elevated to the status of "Protected Non-game Animal." In Washington, following a drastic decline in the population, the species was federally listed as "endangered" in November 2001 under the emergency listing provision of the Endangered Species Act.

In Utah, in contrast to cottontails and snowshoe hares, pygmy rabbits do not enjoy temporal protection of a closed season accorded to upland game species. According to the state's new (2002) rule governing the collection, importation and possession of zoological animals, pygmy rabbits are classified as "controlled." This designation requires a Certificate of Registration for collection or possession of the animals.

Given the probable decline in the species numbers resulting from the threats described above and limited knowledge of its population status, pygmy rabbits will be evaluated for listing as a Species of Conservation Concern under the current state sensitive species rule.

The information in this article was compiled from several sources, including the following references:

Green, J.S., and J.T. Flinders. 1980a. Brachylagus idahoensis. Mammalian Species Accounts 125:1-4.

Weiss, N.T., and B.J. Verts. 1984. Habitat and distribution of pygmy rabbits (Syvilagus idahoensis) in Oregon. Great Basin Nat. 44:563-571.

June Sucker Recovery Implementation Program Helps Utah Valley Grow

by Christopher J. Keleher,
Senior Staff Fisheries Biologist/JSRIP
Recovery Coordinator
Central Utah Water Conservancy District

"I was at Utah Lake last week and of all the fisheries I ever saw, that exceeds all. I saw thousands caught by hand, both by Indians and whites. I could buy a hundred, which each weigh about a pound, for a piece of tobacco as large as my finger . . ."

Parley P. Pratt, *A Correspondence from America*, Letter dated July 8, 1849. *Millennial Star* 11 (1849): 342-343. From Janetski, J.C. 1990. Utah Historic Quarterly Vol. 58, No. 1, pp. 4-31.

Photo: June sucker

"I'm appalled at the fact that a fish as worthless as this one [June sucker] could have such an impact on the water we need to be saving … of course most of these people who desire to save these endangered species have not much history of the west and our need for water."

Provo resident as quoted in:
A Saving the June Sucker, The *Daily Herald*, article dated May 22, 2002. Vol 79, Issue 295, pp. A1 and A8.

The two quotes above span 153 years of the history of Utah Valley and demonstrate how perception of the valley's natural resources has changed over time.

In 1849, the Utah Lake fishery provided a reliable food source to the valley's native human residents as well as European settlers. The reliability of the fishery was a crucial component that enabled pioneers to become established in the harsh and unpredictable conditions of the region.

As the population of Utah Valley grew, the fishery contributed to the local economy as fish were sold to neighboring cities and states.

Economically significant species in Utah Lake at that time included Bonneville cutthroat trout (*Oncorhynchus clarki utah*), June sucker (*Chasmistes liorus*), Utah sucker (*Catostomus ardens*), Utah chub (*Gila atraria*), and mountain whitefish (*Prosopium williamsoni*).

It's unfortunate that the historical significance of the native fish community has been lost from the memory of many local residents. The fishery that once provided food for a growing human population, along with economic benefits, has essentially been extirpated and the remaining native fish are considered "worthless" by many. Only two of the 13 fish species native to Utah Lake still occur there and one, the June sucker, is federally listed as an endangered species.

The presence of an endangered species is often viewed as a "road block" to development and a threat to economic prosperity. In the case of June sucker, however, it may prove to be exactly the opposite. It's possible that the June sucker, which at one time had population levels capable of fostering economic growth could, as a result of its endangered status, once again facilitate growth in Utah Valley.

As an endangered species, June sucker are protected under the Endangered Species Act (ESA). The ESA requires all federal agencies to "consult" with the U.S. Fish and Wildlife Service on activities that pose a threat to endangered species or their habitat. This process can be a long, arduous affair and the results are often controversial and legally challenged. Although the

ESA provides June sucker some protection against extinction, it does not provide funding or a means to implement actions necessary to recover the species.

In an effort to address deficiencies in funding and recovery implementation, and difficulties associated with the consultation process, several entities, including state and federal agencies and private groups, recently formed the June Sucker Recovery Implementation Program (Program).

The Program is a proactive approach in that recovery actions are being implemented to offset threats posed by water development and operations. Under a similar recovery program developed for endangered fish in the Upper Colorado River, 660 water projects depleting 1,703,973 acre-feet per year have received ESA compliance since 1988.

Although federal water projects were the impetus, the Program provides a mechanism for other groups to participate in recovery efforts and to expedite the ESA consultation process. Federal funding, administration, and permitting are used for many activities that could require consultation under ESA for potential impacts to June sucker.

Highway development, airport expansion, dredging, and stream alterations are among the actions that can be expedited by taking advantage of the process established by the Program. The Program is actively pursuing opportunities to collaborate with other entities to promote the recovery of June sucker, a species with historic connections to growth and prosperity in Utah Valley.

By using an ecosystem-based approach, Program participants recognize that actions taken to recover June sucker will lead to a healthier Utah Lake, which will provide benefits to the local community beyond the fish population. What is considered today as a worthless fish by many is actually a vital key to restoring the integrity of the Utah Lake ecosystem.

Illustration by Lani Nielsen

Illustration: June sucker

Sage-grouse Working Groups Preserve Grouse

... And Help Communities Grow

Dean Mitchell
Upland Game Program Coordinator
Utah Division of Wildlife Resources

Sage-grouse, sage hen and sage chicken are all common names used to refer to Utah's largest native grouse; a gallinaceous, or "chicken-like" bird, that has evolved over millennia in the vast sea of sagebrush rangeland found only in the West.

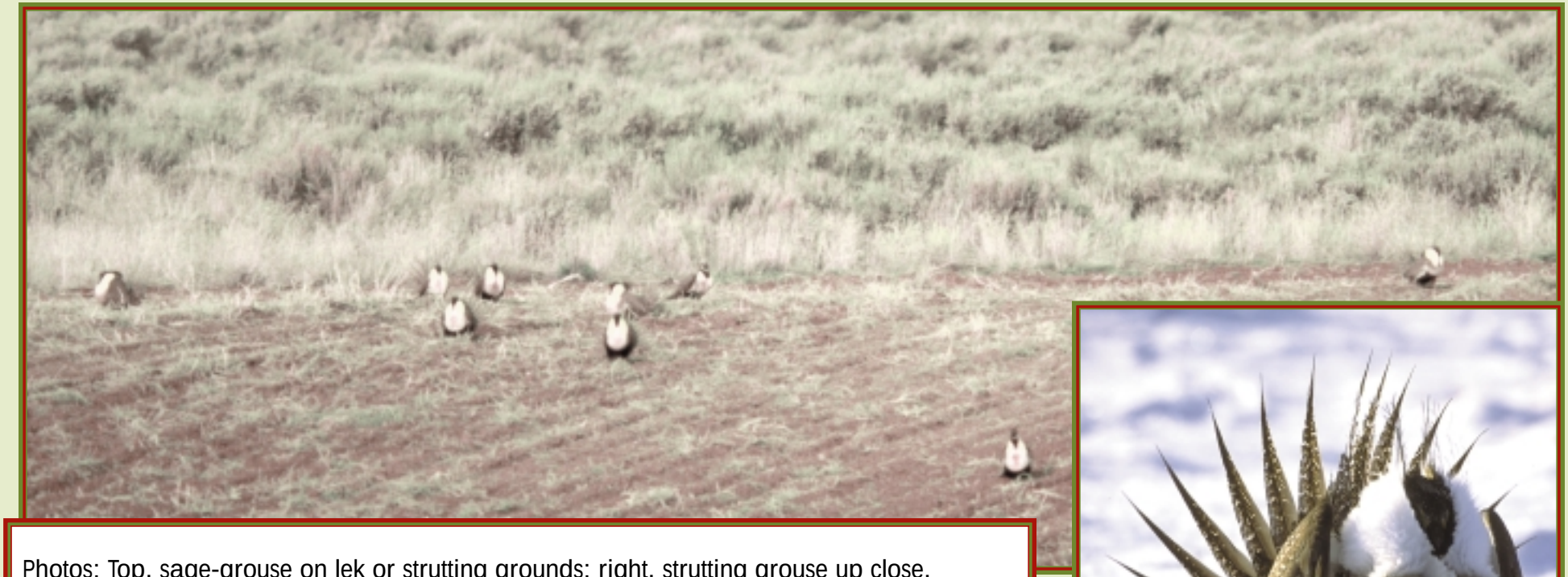
Sage-Grouse Biology/Ecology

Sage-grouse, unlike other gallinaceous upland game birds such as turkeys and pheasants, lack a well-developed muscular gizzard to process food. As such, sage-grouse have come to rely on soft foods, such as the leaves of sagebrush, in order to survive. During the winter, the sage-grouse diet consists, almost exclusively, of the pungent and pliable leaves of sagebrush.

Two species of sage-grouse occur in Utah. The Greater Sage-grouse (*Centrocercus urophasianus*) is found north and west of the Colorado River, while the Gunnison Sage-grouse

Photos by:-R. Stewart Gunnison Sage-grouse; H. Garber Greater Sage-grouse

Photos: Gunnison Sage-grouse, left; Greater Sage-grouse, right.



Photos: Top, sage-grouse on lek or strutting grounds; right, strutting grouse up close.

(*Centrocercus minimus*) is found south and east of the Colorado River, mostly in San Juan County.

Male Greater Sage-grouse weigh up to 7.2 pounds, with females weighing up to 4 pounds. The Gunnison Sage-grouse male attains weights of only 5 pounds, while the Gunnison female weighs from 2.4 to 3.1 pounds.

Annually, sage-grouse exhibit a spectacular breeding display during which males congregate on traditional areas known as strutting grounds, or leks. A dominant male bird, called the "master cock," breeds most of the females that are attracted to the leks.



Photos: Gunnison Sage-grouse, left and center; Greater Sage-grouse, right.

Distribution

Sage-grouse in Utah occupy habitats from 4,000 to 9,000 feet in elevation, in the Colorado Plateau and Great Basin geographic regions.

Found only in western North America, these birds were described by Lewis and Clark in 1805. Various other writings in pioneer journals and historical manuscripts describe sage-grouse in numbers that used to "blacken the sky!"

Franciscan missionaries Silvestre Vélez de Escalante and Francisco Atanasio Domínguez and their exploring party were the first Europeans to describe sage-grouse in the Beehive state. While visiting Utah Valley in September 1776, they reported that "wild hens" (i.e., sage-grouse and [or] Columbian Sharp-tailed Grouse [*Tympanchus phasianellus columbianus*]) around Utah Lake were abundant and used by Native Americans as a food source.

Early naturalists visiting Utah observed that sage-grouse were abundant, even near settlements, until at least the 1870s. In 1875, H. W. Henshaw reported, "The sage hen is very numerous throughout Utah; its predilection, as its name implies, being

for the open, barren plains of Artemisia (sagebrush); and whenever this plant exists in abundance, whether on the extensive stretches of open plain on the lowlands, entirely barren but for the growth of this shrub, or in the valleys high up among the mountains, this bird will not be looked for in vain."

Based on historical accounts and observations, it's likely that sage-grouse were originally found in portions of all of Utah's 29 counties where there was sufficient sagebrush and grass/forb habitats to support them. Present-day research suggests that sage-grouse were historically found throughout 33.2 percent of Utah's landscape. The Greater Sage-grouse occupied 32.2 percent of Utah, while the Gunnison Sage-grouse was found in 1 percent of the state.

Today, only 13.6 percent of Utah's landscape is inhabited by sage-grouse. The Greater Sage-grouse occupies 97.9 percent and Gunnison Sage-grouse 2.1 percent of this area. The current distribution of sage-grouse represents just 40.9 percent of the historical distribution of sage-grouse in Utah. Thus, Greater and Gunnison Sage-grouse currently occupy 41.3 percent and 26.7 percent, respectively, of their potential historical distribution.

The largest Greater Sage-grouse populations in Utah are found on the Blue and Diamond Mountains in Uintah County, Parker Mountain (Wayne County), Rich County, western Box Elder County, and western Garfield County.

Reasons For Population Decline and Current Status

Outright loss, degradation and fragmentation of sagebrush habitats are suspected as the primary causes for sage-grouse population declines throughout Utah. Current research efforts underway in the Strawberry Valley area of Wasatch County have identified predation by nonnative red foxes as a limiting factor in sage-grouse population growth in the area.

A history of suppression of naturally occurring wildfires and resulting changes in rangeland fire intervals and intensity of wildfires, noxious weed encroachment,

changes in domestic livestock and wild ungulate grazing schemes, and the construction of power lines, fences and oil and gas developments have also contributed to declines in sage-grouse populations.

Sage-grouse are presently found in only 26 of Utah's 29 counties. They have been extirpated from Davis, Salt Lake and Washington counties.

The estimated breeding population of sage-grouse in Utah is 13,000 to15,000 birds. Sage-grouse are listed on the Utah Sensitive Species List as a Species of Special Concern because of declining populations and limited distribution. The Gunnison Sage-grouse is listed as a "candidate" species under the ESA.

Conservation Planning Efforts Through Local Working Groups

In June 2002, Utah Division of Wildlife Resources Regional Advisory Councils and the Utah Wildlife Board adopted a Strategic Management Plan for Sage-grouse. The plan identifies an array of statewide sage-grouse issues and concerns, as well as strategies to be implemented to address them.

The plan divides Utah into 13 sage-grouse management units that are based on the current distribution of birds. Sage-grouse conservation issues and concerns, as well as suggested strategies for addressing those issues and concerns, are identified for each of the 13 management units.

As part of the conservation planning process outlined in the strategic management plan, sage-grouse local working groups are to be established in each of the 13 management units. (See map on page 28.) Local working groups are basically committees made up of local private citizens; farmers, ranchers, grazers and local grazing associations; local community leaders, county commissioners, local state senators and representatives; county extension agents and university personnel; conservation organizations; and state and federal natural resource agency personnel.

Sage-grouse local working groups are given the task of completing local sage-grouse conservation plans that not

only meet the needs of sage-grouse, but also the economic, political and social needs of local communities.

Beginning in spring 2001, the Utah Division of Wildlife Resources and Utah State University Extension Services partnered to establish a full-time position called a Community-based Conservation Extension Specialist (CCES). The role of the CCES is to establish, facilitate and maintain sage-grouse local working groups in each of the 13 management units identified in the strategic management plan.

To date, sage-grouse local working groups have been established in the Box Elder, Color Country, Parker Mountain/John's Valley and San Juan management units. A research oversight group has been formed on the Strawberry Valley Management Unit.

The San Juan Local Working Group was the first group established in Utah. It began in 1996 (well before the development of the strategic management plan and creation of the CCES position) to address conservation of the Gunnison Sage-grouse. A formal conservation plan for Gunnison Sage-grouse was signed in 2000 by all parties involved in the local working group. The Gunnison Sage-grouse plan is at present being implemented and monitored.

Sage-grouse local working groups should be assembled and meeting in the Book Cliffs/Uintah Basin, South Slope/Uintah Basin, Southwest Desert, Strawberry Valley and Rich/Summit management units shortly.

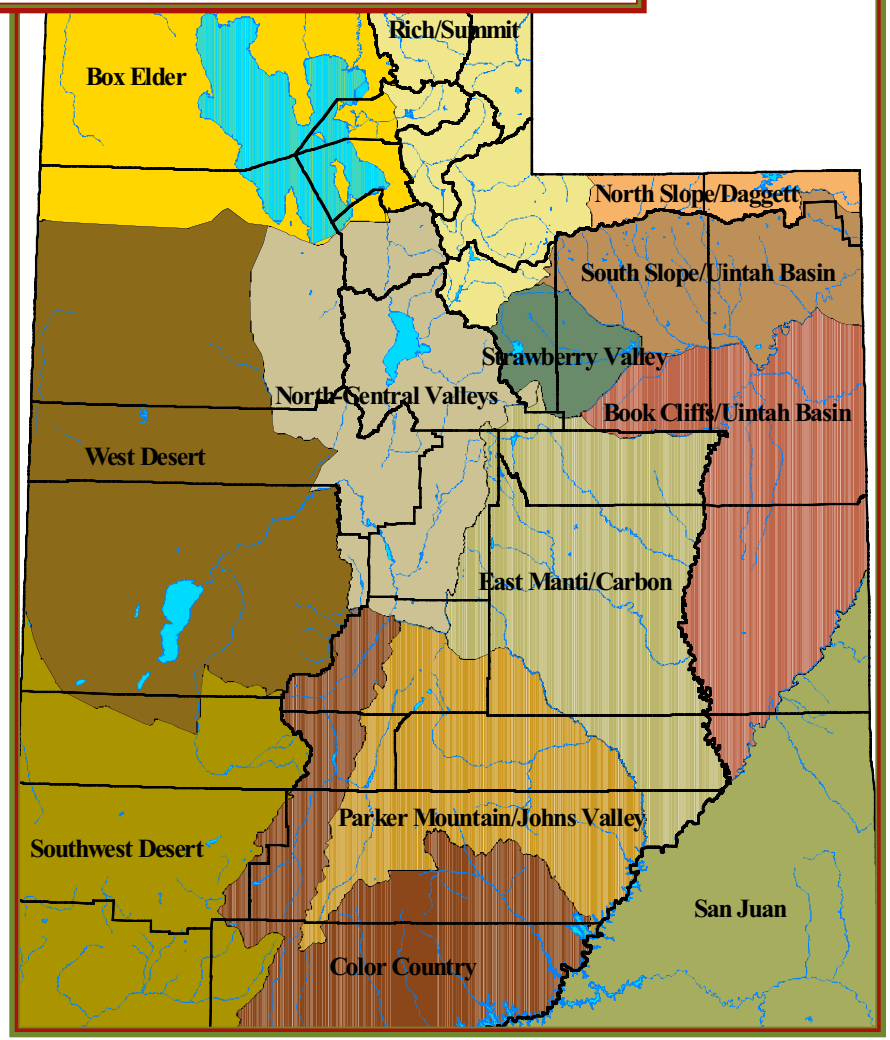
Efforts are underway to create two more CCES positions in Utah in an effort to get all 13 local working groups formed and operating in a more timely manner. Three CCESs in Utah will allow local working groups to expand their conservation planning efforts from strictly sage-grouse to other issues and concerns coupled with sagebrush ecosystems.

The crux of sage-grouse local working groups is to bring local people together to work cooperatively to benefit sage-grouse and benefit local communities that could potentially be affected by sage-grouse management issues,

including the possibility of the birds being listed under the ESA.

Local working groups strive for consensus in their community decisions. In many sage-grouse management units, on-the-ground university graduate students conducting experiments and research are able to provide the local working group with timely population and habitat data. The data is used by the local working group to make educated decisions based on science, rather than hearsay or anecdotal information.

Map: sage-grouse management areas in Utah



Most local working groups operate under the paradigm that, "What's good for the community is good for sage-grouse." In nearly all cases, this is true. If local communities can survive, grow and prosper, while at the same time keeping sage-grouse part of Utah's landscape, there are no losers in this complex natural resource management issue.

Aldo Leopold, considered to be the father of wildlife management, wrote, "*Conservation means harmony between men and land. When land does well for its owner, and the owner does well by his land; when both end up better by reason of the partnership, we have conservation. When one or the other grows poorer, we do not.*"

Sage-grouse local working groups are conservation!

HCPs Facilitate Growth While Preserving Species

by Ted Owens, Special Agent
U.S. Environmental Protection Agency

The Endangered Species Act has many contentious aspects, but perhaps its most difficult implementation occurs when a threatened or endangered animal occurs on nonfederal (private or state-owned) property and a proposed action on the property has the potential to "take" the species in question.

"Take" includes harm, which can mean habitat modification that actually kills or injures a listed species through impairment of essential behavior (e.g., nesting or reproduction). This interpretation of harm has been upheld by the U.S. Supreme Court in recent years.

Habitat Conservation Plans, or HCPs, are plans submitted by nonfederal entities (e.g., individual landowners, counties, cities, developers) to meet legal requirements for issuance of incidental take permits by the U.S. Fish and Wildlife Service. Section 10(a)(1)(B) of the Endangered Species Act requires the USFWS to issue incidental take permits if certain criteria are met.

The three most significant criteria are that (1) "such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity", (2) the applicant must submit a conservation plan (frequently dubbed Habitat Conservation Plan) which outlines "the impact which will likely result from such taking;…what steps the applicant will take to minimize and mitigate such impacts, and the funding that will be available to implement such steps…[and] what alternative actions to such taking the applicant considered and the reasons why such alternatives are not being utilized", and (3) "the taking will not appreciably reduce the likelihood of the

survival and recovery of the species in the wild" (ESA, Section 10(a)(1)(B)).

Simplified, HCPs are compromises between the regulatory agency charged with implementing the Endangered Species Act (either the USFWS or the National Marine Fisheries Service, depending on the species) and the nonfederal project proponent. They involve species whose habitat will be impacted by a nonfederal action that will harm or harass the species in some way. Somehow, this "take" must be offset, or mitigated, by the project proponent. As with all compromises, in most cases neither party leaves the deal feeling it got everything it wanted. These compromises can be extremely complex, lengthy and expensive, although a fair number of simple HCPs are none of these.

As is also the case with all compromises, HCPs are not conducive to blanket statements describing their effectiveness. Many environmental advocates claim that all HCPs are bad, and that they compromise species viability by allowing species already endangered to be further jeopardized. Many developers, local governments and politicians claim that regulatory agencies extract too much from the nonfederal sector to comply with the law. Each HCP, while following legal and regulatory guidance, is a separate compromise that must be examined and analyzed to develop an accurate conclusion as to its effectiveness in protecting the listed species. It also must be analyzed as to its fairness in encumbering a nonfederal entity with costs in time and money for minimization and mitigation of project impacts.

In short, those claiming that HCPs are fundamentally flawed, and those claiming they are the answer to every private land endangered species crisis, are both wrong. HCPs are, when one cuts through all the legal jargon and government red tape, agreements between two (and sometimes more) parties to carry out certain activities. The permittee will conduct some activity (e.g., residential development, timber harvest) which will adversely impact a species listed as threatened or endangered. The

permittee also agrees to undertake specific steps to minimize and mitigate the taking. The regulatory agency ensures that, as long as the permittee follows permit conditions, they will not be liable for take under the ESA.

I am familiar with dozens of HCPs from across the United States. Some are simple and others are extremely complex. I have read many of the documents and have talked with many of the permittees, USFWS and NMFS representatives involved in the HCPs. Some appear to compromise species viability through inadequate regulatory certainty, insufficient science and mitigation which is neither adequate nor commensurate with the anticipated impacts. Others actually enhance habitat for the species in question which is otherwise, through various processes, becoming less and less suitable over time for the listed species.

I have chosen to use two Utah examples of HCPs that preserve species while facilitating growth. Keep in mind that each of these HCPs, permits and their associated documents are very lengthy, and that in an article of this length I can only scratch the surface of what they're about.

Desert Tortoise

The Washington County HCP, approved in the spring of 1996, has been very successful. Development was booming in the St. George area when the Mojave desert tortoise was listed as threatened in 1990. A significant portion of the development was occurring in occupied habitat of the desert tortoise. Several cases against local developers spurred local governments and developers to develop a county-wide habitat conservation plan for the species.

Ever since the permit was issued, developers have certainty as to where, when and how they can develop residential and industrial sites. There are processes in place, most of which are carried out by Washington County staff, to ensure timely development in what is mostly privately-owned tortoise habitat with low tortoise densities. Mitigation fees are assessed by the county to carry out

by Lynn Chamberlain

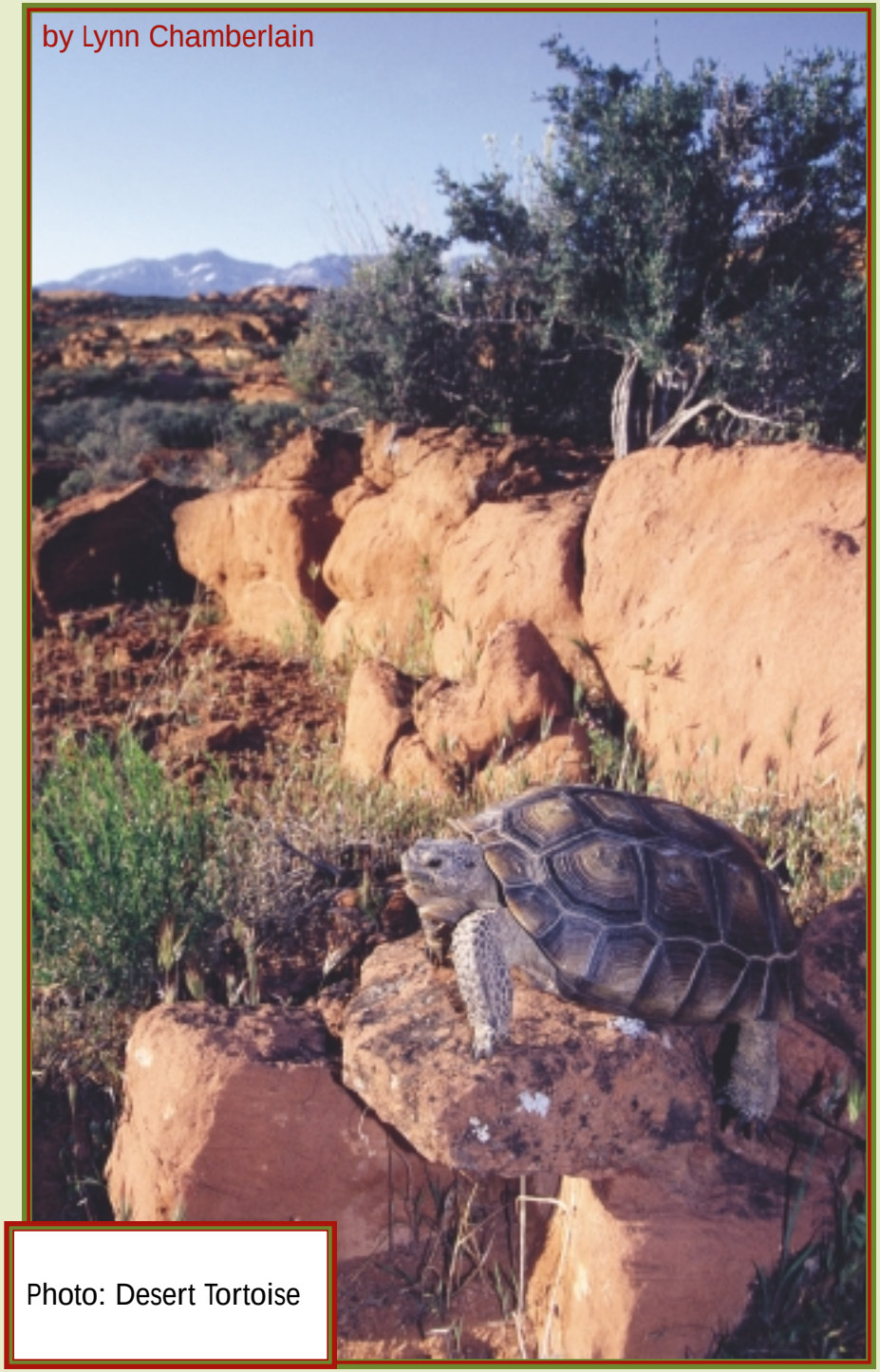


Photo: Desert Tortoise

its obligations under the permit.

The primary mitigation measure under the HCP was establishment of a 61,000 acre reserve, most of which was already owned by the Bureau of Land Management and Snow Canyon State Park. Eighty-seven percent of high density tortoise habitat and 80 percent of medium density habitat found in the recovery unit is inside the Red Cliffs Desert Reserve. To date, 7,900 acres of private and School Trust Lands have been acquired, with most of the credit for this going to the BLM, Snow Canyon State Park, the USFWS, and the Conservation Fund. Washington County has acquired and retired about 2,000 grazing permits, decreasing suspected competition for scarce desert vegetation. The county was also the primary player in establishing 40 miles of fencing that keeps tortoises off roads and off-highway vehicles out of critical habitat areas. The Utah Division of Wildlife Resources, with money from the county's mitigation fees, is monitoring the tortoise population in the reserve. Many redundant dirt roads and access points have been eliminated and tortoise habitat is improving in most areas. Remaining contro-

versies which threaten the reserve include a large proposed roadway through critical habitat, and excessive or unregulated recreational use (primarily mountain bikes) in some areas.

Utah Praire Dog

In Iron County, where two-thirds of all Utah prairie dogs occur, the story was similar. A threatened species, the Utah prairie dog occasionally stood in the way of development, mostly in the Cedar and Parowan valleys. After years of controversy, the Iron County HCP was signed in the summer of 1998. Since then, development has continued in Iron County, even in Utah prairie dog habitat that's mostly privately-owned. At least 97 percent of development proposals are

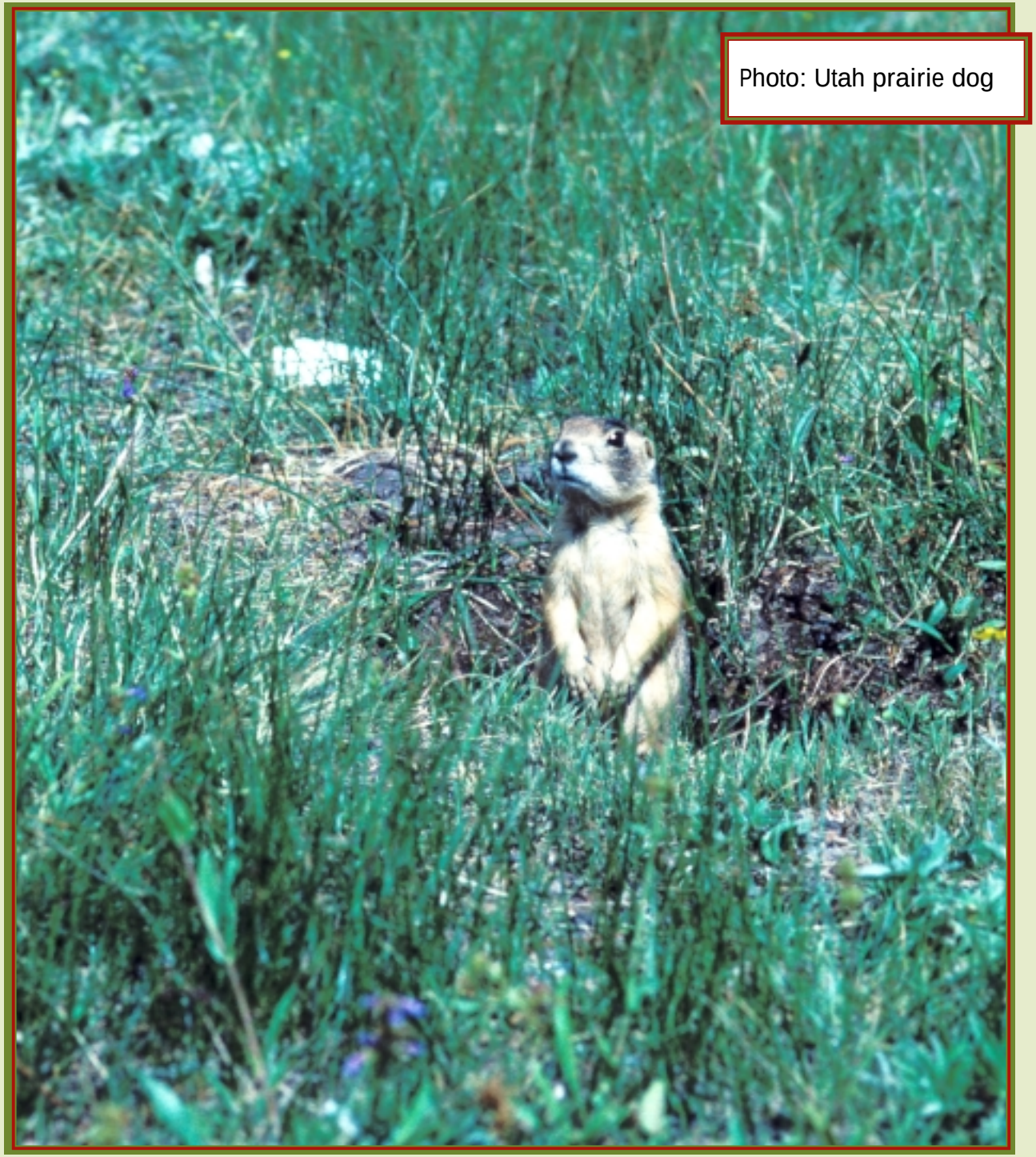


Photo: Utah prairie dog

approved every year, either because they're outside occupied Utah prairie dog habitat, or because the numbers of Utah prairie dogs to be taken are within limits set by the HCP. Those denied development in one year are at the top of the list when the new year starts. The number of prairie dogs allowed to be taken on private lands each year is tied closely to how the animals are faring on federal, or otherwise protected land, giving everyone an incentive to promote Utah prairie dog recovery.

In return, Iron County funds technicians who help the UDWR count, translocate and monitor Utah prairie dogs. The BLM has improved habitat at existing colonies and prepared sites for various aspects of Utah prairie dog ecology, including the plague (a non-native bacterium), grazing impacts on prairie dogs and suspected benefits from seeding into habitat where the shrub component has been greatly reduced.

Garfield County, with the second largest population of Utah prairie dogs, currently has an HCP similar to Iron County's under review by the USFWS's Regional Office in Denver.

HCPs are not perfect, but they have set a precedent in Utah and around the country as solutions to some controversial endangered species problems on private and state land. Rural Utahns and their elected representatives are coming to accept that federal protection does exist for threatened and endangered animals, even on private land. The USFWS and many environmental/wildlife advocacy groups are recognizing that not every individual of every listed species needs to be saved to conserve the species. They're also recognizing that the cost of regulating without flexibility can harm landowners needlessly and doesn't necessarily provide what a species needs to survive in the long run.

For more information about HCPs, contact Elise Boeke, wildlife biologist with USFWS, at (801) 975-3330, ext. 123.

Iron County HCP Preserves Utah Prairie Dogs and Promotes Golf Interests

By Dennis Stowell
Chairman, Iron County Commission

How much conflict can an endangered species cause in a community?

One event spawned by Y2K involved the disappearance of some 400 prairie dogs from the Cedar City Golf Course.

Newspaper headlines informed the community and rumors became rampant.

Accusations were made against the Men's Golf Association. Security video of a local Youth Detention Center showed domestic dogs killing them.

Photo by Paul Block

Photo: A Utah prairie dog digs another burrow at the Cedar City Golf Course.

Rumors floated that golfers were running them down in their golf carts!

An investigation launched by the USFWS dragged on for years and enhanced rumors and bad feelings.

As time dragged on, realization set in that several hundred prairie dogs would soon be digging holes in the golf course again. Talk about a golfer replacing his divot; think what hundreds of prairie dogs can do to golf course grass!

With this scenario in mind, a meeting was held among Iron County, the Division of Wildlife Resources, the Bureau of Land Management and the USFWS to seek a solution that would benefit prairie dogs, eliminate conflict, and maintain prime golf course turf.

"The agreed-upon solution was to totally remove prairie dogs from the golf course, but preserve them through acquisition of a Conservation Easement on a high-risk prairie dog colony."

Such a colony exists at Wild Pea Hollow near Minersville Highway. However, the property was owned by the School and Institutional Trust Lands Administration and money was needed to secure it.

That's where the Endangered Species Mitigation Fund came into play. Iron County submitted an application, it was approved and the transaction will take place shortly.

In the meantime, the Golf Course HCP is being written. Upon completion, approval and publication in the Federal Register, the Cedar City Golf Course will become free of burrows and piles of the dirt, the prairie dogs will become secure in their home at Wild Pea Hollow and the golfers will go back to replacing their divots!

Garfield County Plans for the Future: Balances Needs of Residents and Utah Prairie Dogs

by Keith Day
DWR Native Species Biologist

The Utah prairie dog was one of the first mammalian species to be placed on the U.S. Fish and Wildlife Service's Endangered Species List following the 1973 passage of the Endangered Species Act (ESA).

Listing provided complete protection for this species and resulted in the institution of recovery efforts. It also, however, put Utah prairie dogs and people in direct and immediate conflict.

Recently, two southwestern Utah counties have expended considerable

Photo: Utah prairie dog habitat

effort to ameliorate this conflict, allowing both recovery of Utah prairie dogs and human development.

Iron County developed, and has administered for four years, a Habitat Conservation Plan (HCP) for Utah prairie dogs. The success of this program has spurred Garfield County to take a similar approach.

Though not as heavily populated as Iron County, Garfield County supports the second largest population of Utah prairie dogs. As the county grows, conflicts continue to arise. Over the past two years, the Garfield County Commission has worked in concert with federal and state land and wildlife management agencies, private citizens and businesses, and interest groups, to develop an HCP that will work for Garfield County.

This approach, though long and involved, has resulted in the development of a plan that will provide for the long-term recovery of Utah prairie dogs in Garfield County. County residents will benefit because they will soon have in place mechanisms by which they can pursue their plans for property development in the presence of this species - an option previously unattainable for most people. Utah prairie dogs benefit because many parties, and their associated resources, will now be actively pursuing recovery and human development will be moderated.

The coming year will be an exciting time for Utah prairie dogs and people in Garfield County. The new HCP should be in force before the end of the summer of 2002 and two recovery directed research projects will be in full swing. Also, three habitat improvement programs have already begun as a result of HCP planning.

Photo: Utah prairie dog

Washington County Habitat Conservation Plan Preserves Desert Tortoises and Promotes Housing

by Lori Rose
HCP Biologist/Resource Specialist

The communities of Washington County continue to grow despite hot summers, drought years, and the desert tortoise.

Businesses are moving into the area, bringing employment opportunities and providing desirable goods and services to the area's growing retirement community. New subdivisions with southwest-style architecture and desert landscaping are being built against a scenic backdrop of red cliffs and Mojave desert scrub. Within a few short minutes from most front doors, a system of sidewalks and trails lead residents into the Red Cliffs Desert Reserve, a 62,000-acre scenic wildlife reserve set aside to protect the desert tortoise and other rare and sensitive plants and animals.

The Red Cliffs Desert Reserve was established by the Washington County Habitat Conservation Plan (HCP) in 1996 to protect a large, diverse, and functional expanse of habitat capable of sustaining wildlife populations threatened by rapid development and habitat loss across the county. The goal of the plan is to provide a mechanism to allow orderly growth and development without further jeopardizing federally listed or candidate species, particularly the desert tortoise, and it's working!

History of the Washington County HCP

On April 2, 1990, the Mojave population of the desert tortoise was listed as threatened under the Endangered Species Act. Primary reasons for the listing included deterioration and loss of habitat, collection of the tortoises for pets or other purposes, elevated levels of predation, loss from disease, and the inadequacy of existing

regulations to protect tortoises and their habitat.

Following their designation as a threatened species, it became obvious much of the rapid development around St. George and other Washington County communities was occurring in desert tortoise habitat, and tortoises were being "taken" as defined by the Endangered Species Act. As a service to its residential and business communities, county officials sought a county-wide incidental take permit.

In March 1996, following years of negotiations, the U.S. Fish and Wildlife Service issued the county an incidental take permit authorizing take of 1,169 tortoises associated with development of 12,264 acres of desert tortoise habitat outside of the protected reserve.

It's Working

In the six years since the permit was issued, more than 2,000 acres of privately owned tortoise habitat have been developed after county personnel have searched the property for tortoises. The county performs this service at no charge to the landowner. Development has been both commercial and residential, but there is a noticeable increase in quality residential properties.

The new neighborhoods along the boundary of the reserve take advantage of the habitat and the reserve's 130 miles of shared-use trails to draw buyers interested in open space, recreation, and scenic vistas.

In keeping with its obligations under the HCP, the county and its partners—the Utah Division of Wildlife Resources, the Bureau of Land Management, the U.S. Fish and Wildlife Service, and local communities—have worked to reduce threats to tortoises within the reserve to increase the likelihood that they'll survive.

Fencing has been installed along reserve boundaries and major roads, to keep tortoises out of harm's way. Other important measures include the acquisition of grazing permits and private inholdings at fair market value, restoration of native vegetation, designation and marking of trails, monitoring

of tortoise population changes, and the dissemination of public educational materials.

Public perception of the reserve's history has evolved from deep frustration to a growing understanding of the benefits provided by the HCP.

It is a local solution to the national problem of protecting threatened wildlife. The county and communities have substantial influence in the management of the reserve, and individual landowners are no longer burdened with the challenge of negotiating individual conservation agreements with the Fish and Wildlife Service. The federal agencies are committed partners — they meet regularly with the local interests to discuss issues and make joint decisions. They also contribute substantial financial resources to the success of the reserve.

The Red Cliffs Desert Reserve has become an irreplaceable community asset. With its more than 130 miles of shared-use trails for hiking, horseback riding, and mountain biking, the quality of life in the adjacent communities will forever be enhanced by the protected vistas and recreational opportunities available so close to home.

Red Cliffs Desert Reserve Map

To help those who want to explore the reserve, the county published the Red Cliffs Desert Reserve Map and Trail Guide last June. This colorfully-illustrated guide provides general information on natural history and recreational uses, shows the location of trails and trailheads, and includes brief trail descriptions. It's available at retail stores in the St. George area or can be ordered by calling (435) 634-5759.

Shrubsteppe Zone Bird Preservation Allows Community Growth

by Jim Parrish
DWR Utah Partners in Flight
Program Coordinator

Each year, Utah hosts tens of thousands, even millions of visitors from far away lands. Most are enroute to other places, but for many our state is their destination. Year-in and year-out they keep coming, primarily because of our landscape.

For some, our state and national parks are their destinations. Others tour our farmlands and country sides in search of a special place. A few are content to visit our cities and towns, and a small number remain here year round.

Usually when we read of tens of thousands, or millions of visitors, we think of the human tourists that visit Utah each year, and even people who visit year after year, year-end and year-out. But the emphasis here is on birds, particularly those species known as Neotropical migratory birds or "neotrops," who, like

By Jim Parrish

Photo: sagebrush community

their human counterparts, annually come to Utah by the tens of thousands.

Unlike their human counterparts, however, these neotrops select Utah for a very specific reason—to raise a family.

The Utah Partners in Flight Program has identified at least 231 species of birds that breed in Utah each year as targets for conservation action. Of these, approximately 80 percent are neotrops and at least 35 percent use shrubland habitats either for breeding or wintering.

Shrublands overall represent a dominant feature of the Utah landscape. Shrubsteppe habitat (sagebrush country), in particular, is the third most common habitat type. It comprises more than 7 million acres of the landscape statewide. Sagebrush country symbolizes the West and a variety of wildlife has adapted to living in this semi-desert environment.

Shrubsteppe and the birds that depend on that habitat are priorities for conservation planning purposes. Through a cooperative effort involving both state and federal agencies, a conservation strategy is being implemented that will help insure the long-term health and vitality of shrubsteppe habitat and its associated bird communities.

Even so, numerous threats exist to shrubsteppe and other shrubland habitats

By Frank Howe

Photo: Brewer's Sparrow

statewide. Livestock grazing, off-highway vehicle (OHV) use, oil and gas development, urban expansion and real estate development, wildfires, long-term drought and numerous other activities and circumstances place heavy pressure on shrubsteppe habitat. Even though seven million acres sounds like a lot, when all of these pressures and related actives are added up, all too often little is left available to the bird communities and other wildlife trying to exist in these areas.

Nationally, shrubland birds show some of the most consistent population declines of any group of bird species over the last 30 years. The populations of 63 percent of shrubland dependent bird species are declining, and in the Intermountain West more than 50 percent show downward trends. As an example, the Greater Sage grouse, a year-round resident in shrub-steppe habitat, is now on the Utah Sensitive Species List and the Gunnison Sage-grouse, another shrubsteppe resident, is now a candidate for federal listing under the Endangered Species Act.

The reason for declines in bird populations are often complex and sometimes poorly understood. As such, a cooperative approach to addressing pressures on shrub-steppe habitat and the birds that live there is needed.

Focused, cooperative and voluntary habitat conservation on a landscape level is the key to avian conservation. Focusing on habitat will improve conditions for all birds, whether migratory or resident, endangered or common, game or non-game, and will contribute to the protection of other forms of wildlife, plants and ecological communities. An abundance of wild birds contributes to ecosystem health and provides economic, recreational, scientific and aesthetic values for society.

Birds are often referred to as indicator species. Healthy bird populations reflect a healthy quality of life.

Along with sage-grouse, Columbian Sharp-tailed Grouse, Sage Sparrow and Brewer's Sparrow are high priority species for conservation action in Utah's shrubsteppe habitat. At least 18 additional species are considered as either obligates or are closely associated with shrubsteppe in Utah.

Most of Utah's birds are not in danger of going extinct. Even so, shrubsteppe habitat and the bird communities that exist there should be carefully considered when community growth pressures are brought to bear. Every effort to preserve shrubsteppe birds should preclude the continued listing of species that depend on this habitat to breed and raise their broods, or to survive the winter.

Success will not be possible, however, without encouragement of and commitment to compatible land-use practices.

Continued declines in shrubsteppe birds will reflect a decline in healthy shrubsteppe habitat.

Community growth that fails to consider impacts to shrubsteppe habitat will ultimately yield a reduced quality of life. And quality of life is what the West is all about.

Photo: Sage Sparrow

By Frank Howe

Managing the Bonneville Basin's Aquatic Resources

By Matthew E. Andersen
DWR Native Aquatic Species Coordinator

Relax and let your mind's eye picture the following scenes:

☆ Gazing out across a desert valley from its margin, up on a hill, the summer heat is so intense that it's reflected back to the sky, making the air shimmer. From here you can see the reeds and trees that surround the pond at the base of the valley where you saw spotted frogs and least chub earlier in the day.

A hot breeze crosses the landscape, tossing small dust devils into the shimmers, obscuring the trees and mountains on the far side of the valley. The laughter of your friends from below your vantage point distracts you from the dry scene ahead. You join them in the sparkling, sweet water emerging from the hillside. It's nearly body temperature, but on this day feels slightly cool.

Your body seems to drink from every pore as you ease into the spring water, splashing yourself and your companions, surrounded by lush vegetation that filters out some of the sun's rays. Little minnows flash around your legs and between your toes.

☆ On a moonless winter's night you drive straight and flat across an old access road until the highway lights behind you disappear. Winter storms have just passed, washing the air and leaving a dusting of snow. Cold temperatures have flash frozen the landscape, so that every sight is crystallized. A series of frozen spring pools stretch out along the road.

Last summer, you saw tiny springsnails in these pools, but now the black ice and thin layer of snow on them increase the reflective effect of this spectacular night. You pull the zipper of your coat up to your chin to maintain warmth, but the scene holds your eyes, now moist in response to the cold.

Looking up, you are reminded of just how many stars can be seen from Earth with the naked eye. The stars are so bright, the sky so black, and the smooth snow on the ground so uniform that the entire scene is lit by starlight. There's the Milky Way, blazing a course from horizon to horizon. Tonight it seems as if you could swim laps in a Milky Way loop, half on the ground and half in the sky.

☆ You step carefully, quietly up the slope through the woods. The exertion forms a fine layer of perspiration across your forehead and down your back that chills in the cool air whenever you stop to

catch your breath. Much of the winter's snow has melted, but it's still early in the year, so only the conifers are green.

The forest is dark and quiet, despite the proximity of a large metropolitan area. Your destination is just beyond one more tree. As you pull back the branch at eye level, you see a pregnant doe deer drinking from the stream. A female Bonneville cutthroat trout leaps upstream, looking for ripe males and a place to deposit her eggs.

The splash of the leaping fish startles the doe, but does not keep her from drinking her fill. Farther upstream, the gradient of the creek decreases, leveling out to a shallow riffle where water splashing across the gravel catches the sun's rays that make it over the mountain ridges and scatters the light in glistening jewels across the pine needles and tree trunks above the stream. Male cutthroats maneuver over carefully constructed gravel beds in the riffle, flashing the dark spots on their back, deep and distinct against their golden scales that glow in the magnified, low spring light.

Photo: Spanish Fork River

You may recognize the Utah scenes above, and may even recognize what they have in common. They are all in the Bonneville Basin, the eastern half of the huge interior draining bowl of North America, the Great Basin. As Lake Bonneville began to dry some 10,000 years ago, the landscape continued to receive input from surrounding fresh water sources, but there was no outlet to the sea, just as one does not exist today. The most obvious remnant of Lake Bonneville is the Great Salt Lake, which still receives fresh water but only releases water as vapor, gradually concentrating the minerals received.

Modern scientists recognize the historic extent of Lake Bonneville, and name the broad bowl that takes up much of western Utah for the old lake — the Bonneville Basin.

Freshwater aquatic resources are of special significance here, maintaining a special collection of plants and animals adapted to extreme conditions. Hot in the summer, cold in the winter, dry much of the year and dependent on snow for the majority of the precipitation, this land accommodates plants, humans, and other animals because of its fresh water sources, limited as they are.

Balancing the needs of humans today with those of the natural environments in the Bonneville Basin is a challenge that requires contributions from many specialists.

Tracking the condition and needs of the natural aquatic environments in the Bonneville Basin is the charge that has been shouldered by the Bonneville Basin Conservation and Recovery Team (Team). The Team was originally formed in the mid-1990s, but fell inactive due to temporary vacancies and personnel changes. Now that many of the relevant positions have been filled, the individual scientists, managers, and administrators sitting on the Team include representatives from federal agencies, including the U.S. Fish and Wildlife Service, the Bureau of Reclamation, and the Utah Reclamation Mitigation and Conservation Commission and state agencies, including the Central Utah Water

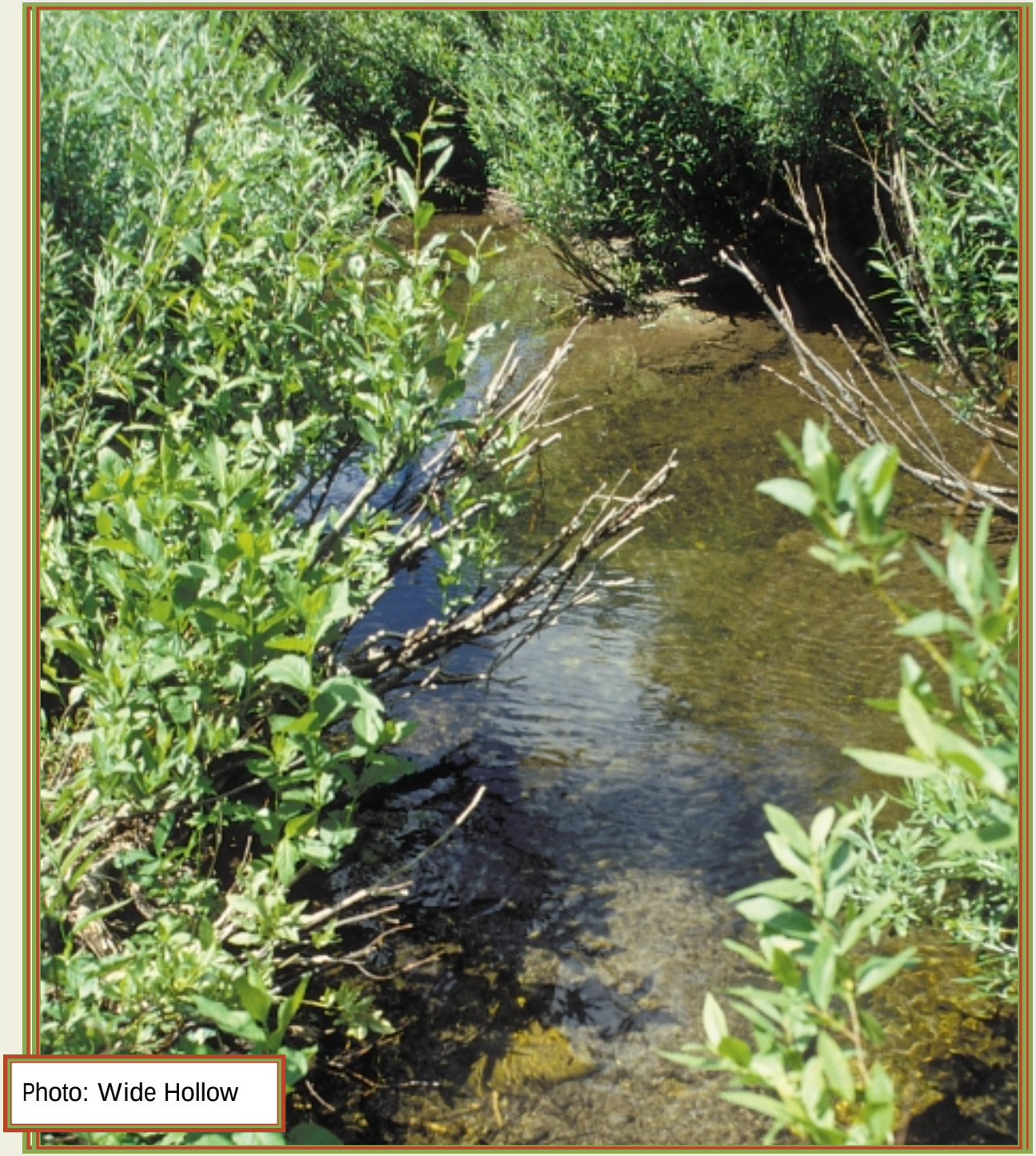


Photo: Wide Hollow

Conservancy District and the Utah Division of Wildlife Resources.

Neighboring state and tribal agencies in the Bonneville Basin have participated in the Team in the past, and one of the current charges for the Team is reiniti-ating those important relationships.

The Team recognizes that aquatic resources, especially aquatic wildlife in the Bonneville Basin, are unique, often fragile, and often at risk in the modern era. They seek methods of protecting these unique resources so they'll persist for future generations.

Some protection is currently afforded aquatic species in the Bonneville Basin by active groups of concerned agencies. The June sucker, the lakesucker fish species

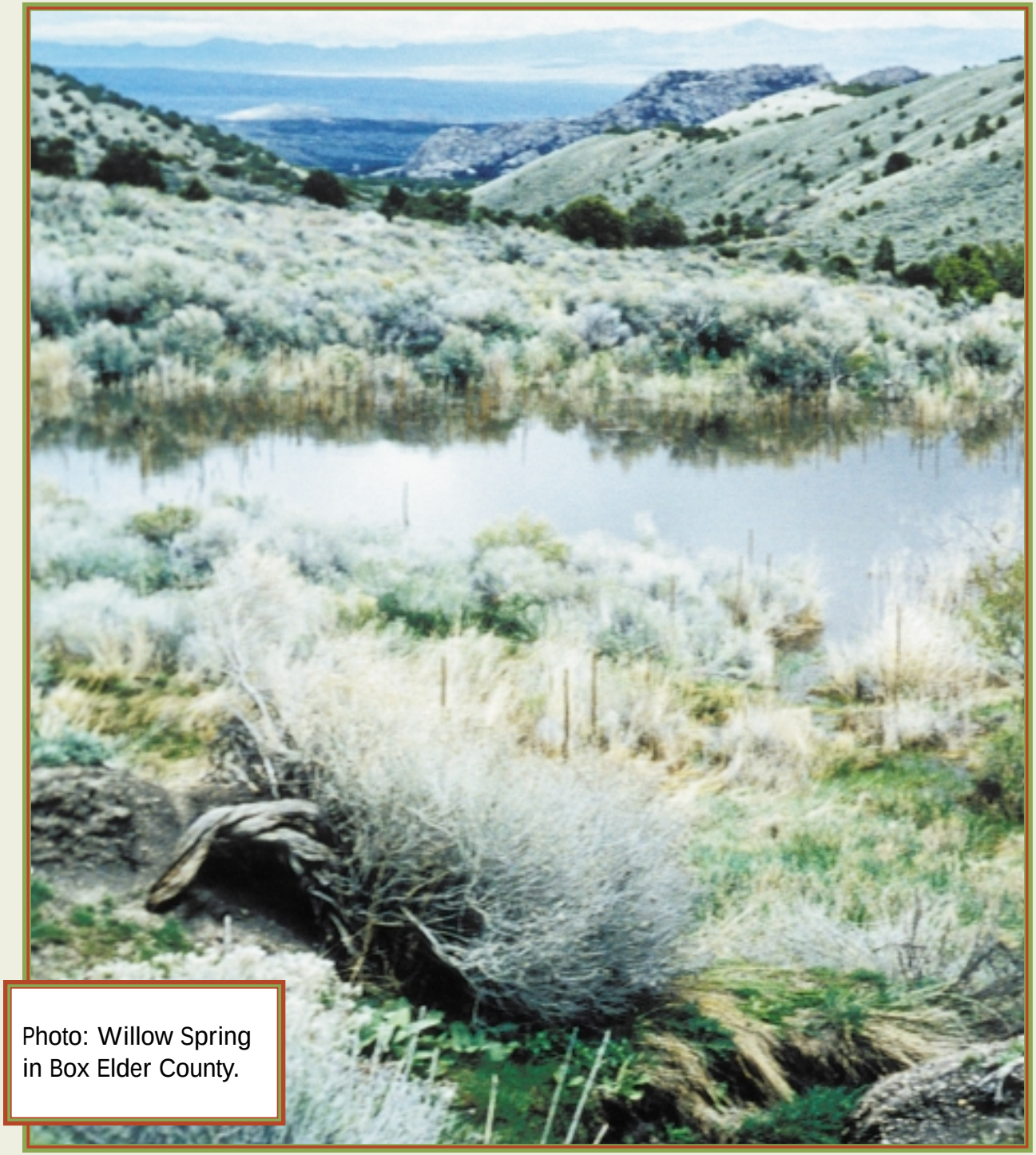


Photo: Willow Spring in Box Elder County.

found only in Utah Lake, is listed by the federal government as an endangered species. A specific recovery team has been formed to address the needs of the June sucker and its habitat.

Similarly, aquatic animal species from the Bonneville Basin that are at risk have been identified and are the subject of Conservation Agreements that include the formation of Conservation Teams to develop actions to protect these species. Conservation species include the Bonneville cutthroat trout, spotted frog, and least chub.

A largely administrative group, the Team seeks to lend its assistance to conservation programs as needed, particularly with respect to identifying

applicable funding and providing overall prioritization for conservation actions, based on the input of technical committees, when available. The Team recognizes that substantial efforts are already underway to help these species, and so their need for administrative guidance may be limited.

The Team also seeks to improve evaluation of aquatic species not currently listed by the federal government as conservation species. This is done in hopes that overall ecosystem health will be protected and improved in the Bonneville Basin and that these actions will reduce the need for future listings. Team members intend to accomplish this by directing funds to agencies and actions determined to be of high priority in this regard. To increase overall habitat conservation efficiency in the Bonneville Basin, they also seek to identify where single or limited actions will benefit more than one species.

Conversely, by meeting regularly to review current conservation actions in Utah, the Team should be able to reduce or eliminate the potential for conflicting actions, thereby taking a more ecosystem approach to natural resource management and considering all resident native species when developing and implementing conservation actions.

The Team is currently developing a Memorandum of Understanding among the parties to help identify individual roles and collective goals. Members agree that many more worthwhile conservation actions could be taken in the Bonneville Basin than current funding allows. The prioritization of projects and species, and the identification of potential funding sources for species conservation, will occupy much of the Team's efforts in the months to come. The Team is also investigating available methods to evaluate overall ecosystem health, drawing on available techniques, resources, and agencies.

Whether through the use of existing or new methods, the goal of the Team is to improve efficiency and accountability in the management of Bonneville Basin aquatic resources.

Spotted Frog Conservation Agreement Works!

(See related articles on pages 53 to 60.)

By Krissy Wilson
DWR Native Aquatic Species Biologist

Columbia spotted frog (*Rana luteiventris*) has experienced serious population and distribution declines through the years.

To reduce these threats and reverse the population declines, the Conservation Agreement and Strategy for Spotted Frog in the State of Utah was developed in 1998 (Agreement). The Agreement was developed as a collaborative and cooperative effort among resource agencies and private landowners to improve the status of the species. It also describes specific actions and strategies required to expedite implementation of conservation measures for spotted frog.

The goal of these actions is to ensure the long-term conservation of the species and to reduce the likelihood of listing under the Endangered Species Act. If these goals are met, it will be less likely that involuntary and unwelcome restrictions will be imposed on private lands containing spotted frog habitats.

Habitat protection and enhancement is currently the highest priority action under the Agreement. Working cooperatively (on a voluntary basis) with landowners, conservation easements will be negotiated and purchased to protect and improve spotted frog habitats. The purchase of conservation easements will infuse the local economy with money that landowners can use at their discretion. Many of the landowners have indicated they will use the money received for conservation easements to repair fences, buy equipment, and make improvements to their ranching and farming operations.

At the same time, implementation of conservation easements will eliminate or significantly reduce threats to spotted frog and its habitat to preclude listing under the Endangered Species Act.

Another Success Story:

U.S. Fish And Wildlife Service concludes no need to put Wasatch Front population of Columbia spotted frog on Endangered Species List

The U.S. Fish and Wildlife Service announced August 30, 2002 in the Federal Register that the Wasatch Front Columbia spotted frog does not warrant listing as a threatened or endangered species under Endangered Species Act.

Based on the Service's most recent review of the status of the Wasatch Front Columbia spotted frog as a result of a court settlement on August 6, 2001, the Service found stable, viable, and self-sustaining populations of the species distributed throughout the historic range and that the status continues to improve. At this time, there is no indication that the Columbia spotted frog is in danger of extinction or likely to become in danger of extinction in the foreseeable future throughout the Wasatch Front.

"As a result of a partnership with State, Tribal and Federal agencies in Utah — in the way of conservation agreements — several efforts have been implemented that not only improved the frog's habitat but also the status of the species in general," said Ralph Morgenweck, director of the Service's Mountain-Prairie Region. "The participation of universities, local species'experts and other interested

individuals has been crucial to the conservation of the species," Morgenweck added.

The Wasatch Front population of the Columbia spotted frog occurs in isolated springs or riparian wetlands in Juab, Sanpete, Summit, Utah, and Wasatch Counties. The largest known concen-

tration is currently in the Heber Valley. The overall distribution of the Columbia spotted frog is continuous throughout extreme southeastern Alaska, southwestern Yukon, northern British Columbia, and western Alberta; and south through Washington (east of the Cascades), eastern Oregon, Idaho, and western Montana. Its southern extent includes disjunct populations in central and northeastern Nevada, southwestern Idaho, western and north-central Wyoming, and the Wasatch Front in Utah.

Available anecdotal and scant survey information indicates that the Columbia spotted frog could have been the most historically abundant frog on the Wasatch Front. Undoubtedly, there were substantially more populations than today. Available historic and recent information indicates there was a decline in the number of Columbia spotted frog populations along the Wasatch Front through the early- to mid-1900s. In fact, some experts speculated that the Wasatch Front population of the Columbia spotted frog was extinct by the 1980s due to losses of known populations in some areas and widespread human development and land-use. However, after decades of decline, the Wasatch Front population of the Columbia spotted frog has been exhibiting a stable to increasing trend since 1998.

The Columbia spotted frog belongs to the family of true frogs, the Ranidae. Columbia spotted frogs along the Wasatch Front generally possess a salmon color abdomen and brownish black backs with little to no spotting pattern. The spotted frog is closely associated with water. Habitat includes

the marshy edges of ponds, lakes, slow-moving cool water streams and springs.

The Service received a petition in 1989 from the Board of Directors of the Utah Nature Study Society requesting the Service add the Columbia spotted frog to the List of Threatened and Endangered Species and to specifically consider the status of the Wasatch Front, Utah population. In the 12-month petition finding, the Service determined that listing the Columbia spotted frog as threatened in some portions of its range, including the Wasatch Front, was warranted but precluded by other higher priority listing actions.

On February 13, 1998, the Service, in cooperation with the State of Utah and other Federal and Tribal agencies, signed a Conservation Agreement to ensure the long-term conservation of the Columbia spotted frog within its historical range in Utah. On April 2, 1998, the Service determined that the status of the species in Utah had improved and that the Columbia spotted frog no longer warranted listing due to planned and ongoing conservation actions and studies in addition to and pursuant with a Conservation Agreement.

In June 1999, a complaint was filed by the Biodiversity Legal Foundation and Peter Hovingh challenging the "not warranted" finding as violating the Endangered Species Act and the Administrative Procedure Act. On August 6, 2001, a settlement was reached between the plaintiffs and the Government regarding this complaint.

The settlement stipulated that the Service start a new status review and 12-month finding on the Wasatch Front population of the Columbia spotted frog to be completed by July 31, 2002, later extended to August 23, 2002 by agreement with the plaintiffs.

Following this settlement, the Fish and Wildlife Service initiated a review to evaluate the status of the Columbia spotted frog on the Wasatch Front, resulting in the not warranted for listing ruling.

What is the Columbia Spotted Frog?

The Wasatch Front population of Columbia spotted frog and what the 12-month finding means

The Columbia spotted frog (spotted frog) belongs to the family of true frogs, the Ranidae. Color and pattern descriptions of individuals of the Wasatch Front population in Utah include brownish-black dorsal coloration with little to no spotting pattern. Pigmentation on their abdomens varies from yellow to red. The Columbia spotted frog is closely associated with water preferring habitats such as the marshy edges of ponds, lakes, slow moving cool water streams and springs.

Where are Columbia spotted frogs found?

The overall distribution of the Columbia spotted frog is continuous throughout extreme southeastern Alaska, south-western Yukon, northern British Columbia, and western Alberta; and south through Washington (east of the Cascades), eastern Oregon, Idaho, and western Montana. Its southern range includes disjunct populations in central and northeastern Nevada, southwestern Idaho, western and north-central Wyoming, and the Wasatch Front in Utah. The Wasatch Front population

occurs in isolated springs or riparian wetlands in Juab, Sanpete, Summit, Utah, and Wasatch counties.

What is the life cycle of the Columbia spotted frog?

Columbia spotted frogs emerge from hibernation in the spring. Wasatch Front Columbia spotted frog populations begin breeding in early-March and continue through late-April. Breeding usually begins with a male vocalizing, stimulating the other males to call simultaneously. The vocalization is described as a "clicking" noise or as a soft "bubbling" sound. Egg deposition is stimulated by a single pair of frogs followed by other Columbia spotted frogs depositing eggs in the same area. Egg masses are deposited in open, shallow areas near the shoreline. Depending on water temperature, the eggs will hatch tadpoles in 10 - 21 days. Columbia spotted frogs remain tadpoles for 2 – 3 months before undergoing metamorphosis into adult frogs.

Why do people believe that Columbia spotted frogs are in trouble?

Available historic and recent information indicates that the number of Columbia spotted frog populations along the Wasatch Front declined through the early- to mid-1900s. The primary reason for this decline was loss of habitat from human development and land uses. The petitioners believe that current laws do not provide sufficient protection for the Columbia spotted frog and that this species is continuing to decline today.

What is being done to protect the spotted frog?

The Wasatch Front population of Columbia spotted frog is currently managed under an inter-agency Conservation Agreement between federal and state natural resources agencies in Utah. The goal of the Conservation Agreement is to ensure the long-term

conservation of the Columbia spotted frog within its historical range in Utah. The Conservation Agreement established a mechanism for the recovery of the Columbia spotted frog through inter-agency cooperation, coordination of conservation efforts, and development of recovery priorities. As guided by the Conservation Agreement, protection measures such as habitat acquisitions, negotiation and purchase of conservation easements with private landowners, habitat improvements, and others have been completed or are ongoing. In addition, there are numerous completed and ongoing conservation actions that have been undertaken by the State and Federal agencies directed toward the protection and enhancement of the spotted frog and its habitat

Why did the Service decide the listing of the Wasatch Front population of spotted frog as threatened or endangered was not warranted at this time?

The status review revealed that although the species was likely more wide-spread historically, the current status of the Wasatch Front population of Columbia spotted frog is toward more secure populations, reduced threats, and improved habitat conditions. The overall level of threats to the long-term persistence of the Wasatch Front spotted frog has decreased in recent years, particularly since 1998.

Although most of the human activities that contributed to these threats still occur to some extent throughout the Wasatch Front, there is no longer the same level of impacts on the spotted frog that resulted in past wide-spread habitat destruction and the loss of spotted frog populations. Much of the occupied habitat for the spotted frog is under State or Federal ownership and ongoing management of these lands emphasizes the long-term persistence of the spotted frog. The Service found that the spotted frog is not in danger of

extinction or likely to become in danger of extinction in the foreseeable future throughout all or a significant portion of the Wasatch Front.

Where did the Service find its information on the Wasatch Front spotted frog?

Information sources used in this review included:

(1) all comments received by the Service's request for comments (66 FR 47034; September 10, 2001).

(2) comprehensive review of the published scientific literature.

(3) unpublished agency reports and literature.

(4) land management and agency management, planning and decision documents, plans or strategies.

(5) personal communications with pertinent academic and professional amphibian and aquatic experts, State and Federal agency wildlife managers, and known groups or individuals with specific relevant knowledge of the status of the spotted frog and its habitat.

(6) land use and growth projection data layers acquired from the Utah Division of Wildlife Resources and evaluated using ArcView GIS software.

Did the Service offer any recommendations regarding the management of the spotted frog?

Given the success of already completed efforts in acquisition and enhancement of spotted frog habitat, the Service believes that spotted frog conservation efforts should focus on acquisition of additional occupied and unoccupied suitable habitats and range expansion efforts.

Color and patterns include brownish-black dorsal coloration with little to no spotting pattern. Pigmentation on their abdomens varies from yellow to red.

The Service supports voluntary land protection mechanisms, such as conservation easements, that work in cooperation with and mutually benefit private landowners. Conservation efforts should also include reestablishment of spotted frog populations, and associated research and land management necessary to maintain new populations. The Service is encouraged by ongoing and planned state and local programs to protect and restore the spotted frog within its historic range on the Wasatch Front.

Does the spotted frog have "distinct population segments?"

The U.S. Fish and Wildlife Service and National Marine Fisheries Service have adopted criteria for the designation of unique animal stocks, termed a distinct population segment (DPS), under the ESA. To constitute a DPS, a stock or group of stocks must be:

(1) discrete (i.e. spatially separated from other stocks of the taxon).
(2) significant (e.g., ecologically unique for the taxon; extirpation would produce a significant gap in the taxon's range; the only surviving native stock of the taxon; or there is substantial genetic divergence between the stock and other stocks of the taxon).
(3) the status of the stock must warrant protection under the ESA.

Based on geographic and climatic separation and supported by genetic separation, the Service recognizes 5 DPSs of spotted frogs throughout its range– (1) the main population (Alaska, British Columbia, Alberta, Wyoming, Montana, north and central Idaho, eastern Washington, and northeastern Oregon), (2) the Great Basin (southern Idaho and Nevada), (3) West Coast (western Washington, Oregon, Idaho, and Nevada), (4) the Wasatch Front, Utah, and (5) the West Desert, Utah. Separation of the West Desert and Wasatch Front DPSs in Utah is supported by geographic isolation in addition to ecological and demographic distinctiveness. This 12-month finding is specific to the Wasatch Front DPS.

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Community Partnerships ... Help Dreams Come True

Story & photos by Debbie Felker
Information and Education Coordinator
Upper Colorado River Endangered Fish Recovery Program

Kellen Keisling met his first razorback sucker during a science class at Page High School in Arizona. Kellen and his classmates helped raise this rare fish species, which is found in the Colorado River system and nowhere else in the world.

Students worked with biologists from the Utah Division of Wildlife Resources' (UDWR) Wahweap Fish Hatchery to raise endangered razorback sucker in public golf course ponds. They fed, weighed and measured the fish and recorded research data. They also tagged the fish and released them into the Colorado River as part of an effort to restore populations of fish that can reproduce in the wild.

Now in its seventh year, this unique, award-winning science course is a partnership among the school, the UDWR, the City of Page, and the Upper Colorado River Endangered Fish Recovery Program (Recovery Program).

The experience led Kellen to pursue his dream of becoming a biologist. This is his third summer on staff at the Wahweap Fish Hatchery, where he helps raise sportfish such as tiger muskie, smallmouth bass and wiper to stock in Utah lakes. Occasionally he helps raise native fish, including razorback sucker, bonytail, woundfin and June sucker.

This fall Kellen, 19, will be a sophomore at Mesa State College in Grand Junction, Colorado, where his major is biology.

"It's awesome," he said about his summer job. "I've had the opportunity to confirm now that this is the career I want, rather than wait until I graduate from college to see if I would like it. I'm getting

a head start on getting work experience in my chosen field. The things I learn here help me when we study about them at school."

Hundreds of miles away in Utah's northeast corner, members of the Northern Ute Indian Tribe gathered in May 2002 at a dedication ceremony for an Elders Pond that will be constructed on the Uintah and Ouray Indian Reservation at Fort Duchesne, Utah.

"We are so happy to have this fishing pond for our tribal elders to enjoy," said Irene Cuch, director of the Northern Ute Indian Tribe Senior Citizen Center. "Many of our senior citizens can't get out into the mountains to fish like they did when they were younger. Having this pond so close to our senior center will make it possible for our elders to walk just a short distance and fish in their pond. We have dreamed of having a fishing pond for almost 10 years. We are so grateful to finally have our dreams come true."

The pond is slated for completion in September. Eventually, the area will be landscaped and picnic tables and a boardwalk installed.

"After the ceremony, the pond and the area surrounding it will be a sacred site where tribal members — especially tribal elders — can come and enjoy nature and the outdoors," Tribal Religious Leader Clifford Duncan said during the traditional prayer ceremony. "The tribal

Upper Colorado River Endangered Fish Recovery Program

The Upper Colorado River Endangered Fish Recovery Program is a cooperative program involving federal and state agencies, environmental groups and water and power-user organizations in Colorado, Utah and Wyoming. Its purpose is to recover endangered fish while allowing development of water resources for human uses.

The four endangered fish species are humpback chub, bonytail, Colorado pikeminnow and razorback sucker. For more information, call 303-969-7322 or visit the program's Web site: ColoradoRiverRecovery.fws.gov

Photos (this page and next): The Elders Pond under construction. The pond was completed in September 2002.

elders will be able to fish here and bring their grandchildren to the pond to fish."

Two species of endangered fish live in the Duchesne and Green rivers, which will provide water to the pond. To ensure that sportfish stocked in the fishing pond do not escape and interact with razorback sucker and Colorado pikeminnow, the Recovery Program will help fund a fish screen at the pond's outlet. Uintah River High School students will monitor the screen and gather scien-

tific data. The U.S. Environmental Protection Agency and the Ute Indian Water Settlement Office will fund the pond construction.

"Without the screen, the Elders Pond could not be stocked with sportfish because of their threat to endangered fish," said U.S. Fish and Wildlife Service Biologist Dave Irving. "The screen is an example of how creative solutions can benefit both people and wildlife. Working together, we've found a way to make sure the dream of an Elders Pond could become a reality without impacting an endangered species."

In the neighboring community of Vernal, Max and Dale Stewart's dream came true in early June 2002. During the depression in the 1930s, these brothers caught fish in the Green River to feed their family. At the age of 8, Max caught a 25-pound Colorado pikeminnow (called squawfish or whitefish in those days) that was nearly as big as he was.

Changes to the river system during the mid-1900s led to the decline of the humpback chub, bonytail, Colorado pikeminnow and razorback sucker. Today the Recovery Program is working to bring these species back from the brink of extinction.

Biologists are beginning to see the return of Colorado pikeminnow in areas where the Stewart brothers fished as children, offering hope that these once popular sportfish could again become abundant throughout the Colorado River system. In June, the Recovery Program took Max, 73, and Dale, 81, to the White River where they were able to see the Colorado pikeminnow again.

"We knew there was an effort taking place to restore this species," Max said, "but we didn't think we'd live long enough to ever see them again. It was a thrill to see them. We hope that someday people will have as much fun fishing for them as Dale and I have."

In communities all along the Colorado River north of Lake Powell, the Recovery Program works with public and private organizations and residents.

"Although the Recovery Program's primary focus is to recover four species

Photo: Dale and Max Stewart — In June, 2002 the Recovery Program took Dale, 81, and Max, 73, to the White River where they were able to see the Colorado pikeminnow again.

"We knew there was an effort taking place to restore this species," Max said, "but we didn't think we'd live long enough to ever see them again."

of endangered fish while allowing water development to continue, recovery efforts benefit far more than just the endangered fish," said Aquatic Biologist Kevin Christopherson, UDWR, who has worked with the Recovery Program for many years.

"Improved river habitat helps other species like ducks, herons, deer and antelope. Colorado River communities have greater opportunities to watch wildlife. It's very rewarding to participate in a program that brings together so many people and organizations to benefit both people and wildlife."